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Surveillance for Adverse Events Associated with Anthrax Vaccination — U.S. Department of Defense, 1998–2000

Concerns about the potential use of anthrax as a biologic weapon prompted the U.S. Department of Defense (DoD) to announce on December 15, 1997, anthrax vaccination of all U.S. military personnel. This effort is coordinated by the Anthrax Vaccine Immunization Program (AVIP). AVIP plans a phased vaccination process to achieve total force protection against anthrax by 2004. The current phase of implementation includes vaccination of all service members and mission-essential DoD civilian employees assigned or deployed to high-threat areas. On the basis of program monitoring, as of April 12, 2000, 425,976 service members had received 1,620,793 doses of anthrax vaccine adsorbed (AVA) (Bioport, Inc.,* Lansing, Michigan). Some service members have cited concerns about vaccine safety and efficacy in their decision to refuse vaccination, despite the possibility of administrative or disciplinary actions. To assess anthrax vaccination safety, DoD has conducted surveys of vaccinated personnel. This report describes three completed or ongoing surveys (*1*). The findings indicate that rates of local reactions were higher in women than men and that no patterns of unexpected local or systemic adverse events have been identified.

Survey of Self-Reported Reactions to AVA, U.S. Forces, Korea

At one of the largest vaccination sites for United States Forces, Korea, a mandatory, self-administered prevaccination questionnaire was used to obtain data on health status (including pregnancy, if applicable), medication use, and reactions to the previous dose of AVA. The questionnaire was designed to record service members' concerns about AVA and their reports of adverse events (i.e., a medical condition following vaccination that could be related to the vaccine) to promote risk communication between health-care providers and service members. Data from 6879 questionnaires completed during September–October 1998 were reviewed. Approximately 37% (2531 of 6879) of respondents were service members receiving their first dose; records were analyzed for 4348 (63%) service members who already had received and could comment on their first (2427) or second (1921) vaccine doses.

*Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

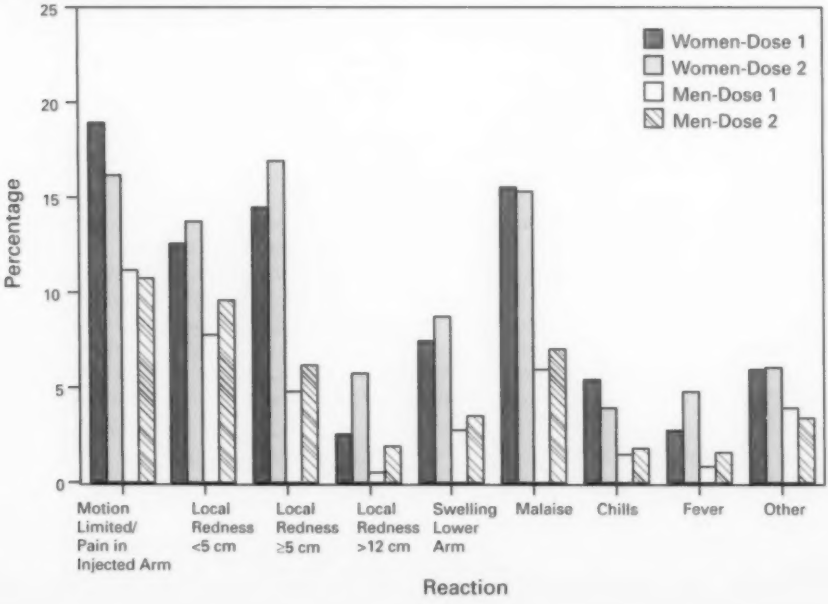
Anthrax Vaccination — Continued

Female service members reported higher rates of reactions to the previous dose of vaccine, regardless of the time period after vaccination (Figure 1). For both men and women, most reported that events were localized, minor, self-limited, and did not lead to impaired work performance, lost work time beyond that required to seek care, and/or a clinic visit or hospitalization. After the first or second dose, 82 (1.9%) of 4348 reported that their work performance had been limited to some extent or that they were placed on limited duty, 13 (0.3%) reported ≥1 day lost from work, 21 (0.5%) consulted a clinic for evaluation, and one (0.02%) required hospitalization for an injection site reaction.

Tripler Army Medical Center Survey of AVA Safety

Tripler Army Medical Center, Honolulu, Hawaii, assessed the frequency and nature of AVA adverse events in a cohort of 603 U.S. military health-care workers in the Korea Medical Augmentee Program. These personnel began receiving anthrax vaccination during September 1998. A self-administered questionnaire was used to collect data prospectively for systemic reactions. Data on local reactions were collected retrospectively for the first three doses and prospectively for the remaining doses. Persons responded to questions on symptoms, signs, time taken off from duty, hospitalizations, and medical visits. Medical records were reviewed and information was obtained from health-care providers about participants who sought medical care, missed one or more work shifts, or had any reaction that might exempt them from further vaccination. Data

FIGURE 1. Self-reported reactions to anthrax vaccine — United States Forces, Korea, September–October 1998



Anthrax Vaccination — Continued

collection up to the fourth AVA dose of the six-dose initial series was complete for 479 (79.4%) of 603 persons. Of the remaining 124 (20.6%), 11 were not vaccinated because of pregnancy, four were exempted from the survey for medical reasons, and the rest were lost to follow-up primarily because of reassignment.

After the first anthrax dose, 47 (7.9%) of 595 reported seeking medical advice and/or taking time off work for a complaint (e.g., muscle or joint aches, headache, or fatigue); after the second dose, 30 (5.1%) of 585; after the third dose, 16 (3.0%) of 536; and after the fourth dose, 17 (3.1%) of 536.

Vaccine Adverse Events Reporting System (VAERS)

DoD uses the CDC and Food and Drug Administration (FDA) Form VAERS-1 to report events potentially related to any vaccination to VAERS and to each military service's disease reporting system. VAERS reports related to anthrax vaccinations are consolidated for AVIP by the Defense Medical Surveillance System. As of April 7, 2000, 428 VAERS-1 reports had been received through DoD. Of these, 311 (72.7%) concerned systemic reactions, 78 (18.2%) were reports on mild or moderate local reactions, and 39 (9.1%) were for large or complicated local reactions. Thirty-six (8.4%) reactions met the DoD mandatory reporting criteria (i.e., hospitalization and/or time off duty >24 hours). None were related to suspected vaccine lot contamination.

A panel of civilian scientific and medical experts established by the U.S. Department of Health and Human Services at DoD's request reviewed all VAERS-1 reports, including those reported directly to FDA or CDC. As of March 21, 2000, the panel has not identified any unexpected patterns of adverse events among 674 reports reviewed.

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Editorial Note: Anthrax is considered a biologic weapons threat because of its stability in spore form, its ease of culture, the absence of natural immunity in industrialized nations, and severity of infection in its gastrointestinal and inhalational forms. If untreated, the case-fatality rate of inhaled anthrax exceeds 80% (*2,3*).

At least seven nations are suspected to have actively pursued biologic weapons programs (*3,4*). Anthrax also has been used at least once by terrorist groups (*3,4*). U.S. service members deployed to future military confrontations may be at risk for attack by biologic warfare agents. The DoD, through the AVIP, seeks to reduce these threats.

Human anthrax vaccine was licensed by FDA in 1970 as a six-dose primary series with annual boosters. It is an aluminum hydroxide-adsorbed, cell-free, noninfectious vaccine prepared from a noncapsulating, nonproteolytic anthrax strain. Licensing was based on safety data, the results of a controlled efficacy trial, and observational data documenting substantial protection against anthrax (*5,6*). Studies in nonhuman primates also have documented protection (*7*). The safety and efficacy of this vaccine was affirmed by an independent advisory panel in 1985 (*5*).

This mandatory vaccination program has posed substantial challenges to DoD. Some service members are reluctant to be vaccinated because of concern about adverse events. These concerns may be heightened by the number of doses required and by allegations linking vaccination with illnesses in Gulf War veterans. Conversely,

Anthrax Vaccination — Continued

some service members may not report adverse events after vaccination because of concerns that they will not be able to complete the vaccination series, thereby limiting career advancement options.

The findings in this report provide information on rates of local and systemic adverse events occurring after anthrax vaccination was delivered as part of a routine program rather than in clinical trials. The findings suggest that rates of local reactions were higher in women than men and that no patterns of unexpected local or systemic adverse events have been identified. Reasons for the higher rates in women are unknown.

The studies reported here are subject to several methodologic limitations, including sample size, the power to detect rare adverse events, loss to follow-up, and exemption of vaccine recipients with previous adverse events. For example, in the U.S. Forces, Korea, study, any service members medically deferred after a previous AVA dose would have been missed by the survey; therefore, adverse events may have been underreported. In the Tripler survey, data were collected retrospectively for the first three doses and then prospectively, potentially resulting in recall or observational bias. In addition, in the Tripler survey, the absence of an unvaccinated control group limited the ability to assess an association of adverse events with anthrax vaccination. The studies were not designed to detect or quantify chronic or long-term adverse events.

Ongoing activities at DoD, CDC, and FDA are targeted toward improving methods to communicate the benefits and risks for vaccination, enhancing surveillance for vaccine adverse events, and continuing to monitor the safety of the program. These interventions may be useful to enhance AVIP.

Risk-communication programs, such as the one in U.S. Forces, Korea, encourage a positive and supportive patient-provider relationship. Surveillance through the VAERS system to detect signals of potential adverse events followed by epidemiologic investigations to evaluate these signals remains important. Potential methodologies for monitoring safety include comparing vaccinated and unvaccinated groups or comparing groups shortly after vaccination with groups whose vaccinations were more distal.

Pilot studies have evaluated intramuscular vaccine administration to reduce rates of local adverse events. Additional studies are planned to expand these data and to determine whether the number of doses required in the primary vaccination series can be reduced while maintaining immunogenicity and protection.

AVIP maintains a World-Wide Web site (http://www.anthrax.osd.mil)[†] with information on the program and electronic mail access to AVIP staff. A toll-free information line for inquiries from health-care providers, service members, and the public also is available (telephone [877] 438-8222).

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[†] References to sites of non-CDC organizations on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites.

Anthrax Vaccination — Continued

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Serogroup W-135 Meningococcal Disease Among Travelers Returning From Saudi Arabia — United States, 2000

On April 9, 2000, CDC was notified by national public health agencies in several European countries of cases of serogroup W-135 meningococcal disease among pilgrims returning from the Hajj in Mecca and their close contacts. As of April 20, 2000, the New York City Department of Health had reported three cases of serogroup W-135 meningococcal disease in the United States.

One patient was a returning pilgrim who had been vaccinated with the meningococcal quadrivalent polysaccharide vaccine, and one was a household contact of a returning pilgrim. The third patient did not participate in the Hajj and had no household or other close contacts who had traveled to Mecca; however, 5 days before illness onset the patient may have interacted with returning pilgrims or their families. The three patients had no identified shared contacts or associations. Two patients had isolation of serogroup W-135 *Neisseria meningitidis* from the blood; in the third patient, the pathogen was isolated from joint fluid. Serogroup classification of the first two isolates has been confirmed as W-135 at CDC; both isolates were subserotype P1.5,2 by PorA gene sequencing. Multilocus enzyme electrophoresis typing results are pending. These are the only cases identified among the 11,000 pilgrims reported to have traveled from the United States to Saudi Arabia for this year's Hajj, which concluded on March 17. No deaths from W-135 meningococcal disease have been reported among pilgrims returning to the United States.

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Editorial Note: As of April 20, 2000, 40 cases of serogroup W-135 meningococcal disease among Hajj pilgrims or their close contacts have been reported to the World Health Organization by national health authorities in the United Kingdom, France, the Netherlands, and Oman (*1*). In addition, 199 cases of meningococcal disease were reported from Saudi Arabia, including 30 of serogroup W-135 and 55 of serogroup A. This is the largest recorded outbreak of serogroup W-135 meningococcal disease. In the United States, W-135 accounts for 3%–4% of meningococcal disease (*2*) and previously has not been associated with an outbreak. Meningococcal disease most commonly is manifested as bacteremia or meningitis but can present as septic arthritis or pneumonia.

Prompted by a serogroup A meningococcal disease outbreak associated with the 1987 Hajj (*3,4*), Saudi Arabia began to require meningococcal vaccine for all entering

Meningococcal Disease — Continued

pilgrims; however, the vaccine formulation varies by country. Most U.S. pilgrims probably received the quadrivalent polysaccharide vaccine covering serogroups A, C, Y, and W-135, because it is the only meningococcal vaccine distributed in the United States. Meningococcal serogroup A and C polysaccharide vaccines have clinical efficacies of 85%–100% (*5*). Vaccination with W-135 polysaccharide induces bactericidal antibody, although clinical protection has not been documented. Nevertheless, cases among U.S. pilgrims could occur from polysaccharide vaccine failure or from having been vaccinated in countries using a bivalent A and C vaccine. Because the polysaccharide vaccine does not prevent or eliminate carriage, close contacts of returning pilgrims may be at risk.

Health departments and health-care providers should be aware of possible meningococcal disease among persons who recently traveled to Saudi Arabia or their household contacts who may not have traveled. Surveillance by local and state health departments should be enhanced for cases of meningococcal disease in persons who may have had contact with returning pilgrims or their families, or for any case of serogroup W-135 meningococcal disease. Health departments in areas with substantial numbers of returning pilgrims should consider disseminating information on the signs and symptoms of meningococcal disease, particularly among returning pilgrims and their household contacts.

If possible cases are identified, health-care providers should contact the local or state health department and CDC's Meningitis and Special Pathogens Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, telephone (404) 639-3158. Any isolates should be saved and sent to CDC for further analysis.

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Alcohol Policy and Sexually Transmitted Disease Rates — United States, 1981–1995

In the United States, adolescents and young adults are at higher risk for acquiring sexually transmitted diseases (STDs) than older adults (*1*). In addition, young persons who drink alcohol may be more likely than persons who abstain to participate in high-risk sexual activity, such as unprotected sexual intercourse or multiple sexual partners (*2*). If alcohol consumption promotes risky sexual behavior (disinhibition caused by the effects of alcohol), state government alcohol policies, such as alcohol taxation and minimum legal drinking age requirements, might reduce STD incidence among adolescents and young adults. Higher alcohol taxes and increases in the minimum legal drinking age have been associated with lower incidences of adverse alcohol-related health outcomes

Alcohol Policies and STDs — Continued

(e.g., motor-vehicle crash-related deaths, liver cirrhosis, suicide, and violent crime, including domestic violence) (*3,4*). This report summarizes the findings of a study (*5*) that suggest higher alcohol taxes and higher minimum legal drinking ages are associated with lower STD incidence among certain age groups.

The study examined the association between crude gonorrhea incidence (new cases per 100,000 population) and alcohol policy indicators (alcohol taxation and drinking age requirements) in the 50 states and the District of Columbia during 1981–1995. Alcohol policy data were obtained from the Distilled Spirits Council of the United States (*6,7*), and gonorrhea incidence data were collected by CDC through surveillance systems in each state (*1*). The relation between alcohol policy and gonorrhea rates was established using a quasi-experimental analysis of a state's gonorrhea rate during the year before and after a change was made in the state alcohol policy indicators and a multivariate regression analysis between state gonorrhea rates and state alcohol policy indicators.

The quasi-experimental analysis compared changes in gonorrhea rates in states with a beer tax increase (experimental states) with changes in gonorrhea rates in states without a beer tax increase (control states). An experimental state had a relative decrease in its gonorrhea rate if the decrease was greater (in percentage) than the median of the control states. To test the null hypothesis that beer tax increases had no effect on gonorrhea rates, p-values were calculated as two-tailed tests from the binomial distribution under the null hypothesis that each change in the gonorrhea rate in experimental states would have a 0.50 probability of being a relative decrease. A quasi-experimental analysis of drinking age increases also was conducted.

In the regression analysis, the dependent variable was the state-specific gonorrhea rate, and the alcohol policy indicators were independent variables. The model included variables for each state and each year to control for state-specific differences in gonorrhea incidence and trends in gonorrhea incidence common to all states. To further control the models for omitted and/or unobservable factors (e.g., state-level demographic characteristics and STD-prevention activities) related to state-specific STD rates and trends, the model included the state's gonorrhea rate during the previous year as an independent variable.

Most beer tax increases were followed by a relative proportionate decrease in gonorrhea rates among young adults (24 [66.7%] of 36 instances of beer tax increases among 15–19-year-olds [$p<0.10$] and 26 [72.2%] of 36 instances among 20–24-year-olds [$p<0.05$]) (Table 1). In both age groups, this relation was greater for gonorrhea rates among men than women. Most minimum legal drinking age increases were followed by a relative proportionate decrease in the gonorrhea rate, and this majority was statistically significant among 15–19-year-olds (29 [65.9%] of 44 instances of minimum legal drinking age increases) but not among 20–24-year-olds (18 [54.5%] of 33 instances). Regression analysis also showed that higher beer taxes were associated with lower gonorrhea rates among young adults in both age groups, and that minimum legal drinking age increases were associated with lower gonorrhea rates among 15–19-year-olds. The regression analysis suggested that a beer tax increase of $0.20 per six-pack could reduce overall gonorrhea rates by 8.9%.

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Editorial Note: The findings in this report indicate that more restrictive state alcohol policies are associated with lower gonorrhea rates among certain age groups. The two

Alcohol Policies and STDs — Continued

TABLE 1. Number and percentage of state beer tax increases or minimum legal drinking age increases followed by decreases in state-specific gonorrhea rates, by age group and sex — United States, 1981–1995*

Age group/Sex	Beer tax increases†		Drinking age increases§	
	No.	(%)	No.	(%)
15–19 yrs	24¶	(66.7)	29**	(65.9)
Men	28**	(77.8)	29**	(65.9)
Women	22	(61.1)	27	(61.4)
20–24 yrs	26**	(72.2)	18	(54.5)
Men	27**	(75.0)	17	(51.5)
Women	22	(61.1)	17	(51.5)

* For example, 24 of the 36 state beer tax increases were followed by a relative proportionate decrease in the gonorrhea rate among men and women aged 15–19 years in the state with the tax increase. Full details of the analysis are available in reference *5*.

† The analysis included 36 instances of a beer tax increase. Some states had more than one tax increase over the period of analysis. Three (out of 39) instances of increases were omitted, two because the tax increase was followed by a tax decrease in the subsequent year, and one because of incomplete gonorrhea incidence data. These omissions could have affected the significance values, although for men in both age groups, the p-value would not have increased above 0.05.

§ For 15–19-year-olds, the analysis included all drinking age increases regardless of the ages affected by the increase. Some states had more than one drinking age increase over the period of analysis. The analysis included 44 instances of a drinking age increase; four (out of 48) increases were omitted because of incomplete gonorrhea incidence data. These instances of omissions could have affected the significance values. For 20–24-year-olds, drinking age increases to only ages 20–21 years were included, for a sample size of 33 increases. Four (out of 37) instances of increases were omitted because of incomplete gonorrhea incidence data. Including all instances of drinking age increases regardless of the ages affected by the increase (as in the analysis for 15–19-year-olds) did not affect the results for 20–24-year-olds (the p-values were not significant).

¶ $p<0.10$.

** $p<0.05$.

methods of analysis yielded similar results and were consistent under a wide range of robustness checks and alternative model specifications (*5*). The results of this study are consistent with a study that higher minimum legal drinking ages were associated with decreases in childbearing rates among teenagers (*8*).

The findings in this report are subject to at least two limitations. First, because state gonorrhea reporting practices vary, state-specific gonorrhea rates should be compared with caution. Second, the analysis may be subject to confounding effects of unobservable factors (e.g., community norms regarding alcohol consumption and sexual behavior or dramatic shifts in state-specific STD rates); omitting these variables could cause substantial bias when comparing across states the association between alcohol policy indicators and alcohol-related health outcomes (*9,10*). Given these limitations, the study findings, particularly the temporal relation between higher alcohol taxes and a decline in gonorrhea rates, are consistent with but do not prove a causal relation between higher taxes and declining STD rates.

The postulated causal relation is based on the assumptions that higher alcohol taxes and a higher minimum legal drinking age can reduce alcohol consumption, and that reduced alcohol consumption can reduce participation in risky sexual behavior. With few exceptions (*2,9,10*), most studies have demonstrated that alcohol consumption declines after alcohol tax increases (*3,5*) and have detected an association between risky sexual behavior and alcohol or drug use (*2*).

Alcohol Policies and STDs — Continued

Reducing alcohol use and risky sexual behavior among young persons are two national health objectives for 2010 (*4*). Higher alcohol prices and improved enforcement of minimum legal drinking age requirements have been highlighted as potential strategies to reduce alcohol consumption by youth (*4*). Alcohol policy also could be used to reduce risky sexual behavior and its adverse medical and social consequences. Additional research is needed to continue examining the relation between alcohol policy and risky sexual behavior.

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Progress Toward Global Poliomyelitis Eradication, 1999

In 1988, the World Health Assembly resolved to eradicate poliomyelitis globally by the end of 2000 (*1*). Since then, substantial progress has been made in implementing polio eradication strategies (*2*), and during 1999 these activities were accelerated to reach the global target. The number of countries where polio is endemic decreased, and the number and quality of vaccination rounds increased. Acute flaccid paralysis (AFP) surveillance improved, and political commitment and the global partnership for polio eradication strengthened. This report updates progress toward achieving the polio eradication goal during 1999.

PROGRESS IN IMPLEMENTING STRATEGIES

Routine Vaccination

During 1990–1997, reported coverage with three doses of oral poliovirus vaccine (OPV3) was approximately 80% globally. In 1998, OPV3 coverage decreased to 72%, reflecting the decline in coverage in four World Health Organization (WHO) regions (African, Eastern Mediterranean, European, and South-East Asian).

Poliomyelitis Eradication — Continued

Supplementary Vaccination

In 1999, approximately 470 million children aged <5 years in 83 countries were vaccinated during National Immunization Days* (NIDs) or Subnational Immunization Days† (SNIDs). The number of NID rounds in priority countries (i.e., those considered major global virus reservoirs or affected by conflict) increased (e.g., Afghanistan, Democratic Republic of Congo [DR Congo], and India). In India, approximately 1 billion OPV doses were distributed during four NID and two SNID rounds during October 1999–March 2000. Three rounds of NIDs in DR Congo reached approximately 8 million children in 1999.

House-to-house vaccination was used increasingly during 1999 NIDs and SNIDs both in high-risk areas during "intensified NIDs" (e.g., in India) and exclusively in large-scale SNIDs in Nigeria and Pakistan. In Nigeria, house-to-house SNIDs reached 20%–40% (depending on the state) more children aged <5 years compared with the last fixed-post NID round.

Mopping-up Vaccination

Although additional SNIDs were conducted in border and other high-risk areas, few large-scale house-to-house vaccination activities (mopping-up campaigns) were conducted in 1999. An intense mopping-up campaign was conducted in southeast Turkey and in neighboring provinces in Iran, Iraq, and Syria, targeting the last known foci of transmission in the entire European Region and bordering countries in the Eastern Mediterranean Region.

AFP Surveillance

AFP surveillance requires detection, investigation, and reporting of AFP cases among children aged <15 years. AFP is monitored by two main performance indicators: 1) the reported AFP rate not attributable to polio (i.e., nonpolio AFP rate) to assess the sensitivity of AFP reporting (target: nonpolio AFP rate of ≥1 cases per 100,000 population aged <15 years); and 2) the completeness of specimen collection (target: two adequate stool specimens§ from ≥80% of persons with AFP). In 1999, 30,003 AFP cases (Table 1) were reported globally (24,657 in 1998), and the number of cases reported from the African Region tripled during 1998–1999. Average specimen collection rates were maintained or improved in four of the six WHO regions; the decreased rate in the African Region reflected a major polio outbreak in Angola (*3*). The American Region was certified polio-free in 1994; three WHO regions have surpassed or are approaching certification level standards (e.g., achieving a nonpolio AFP rate of ≥1 cases per 100,000 population aged <15 years, with adequate stool specimens from ≥80% of persons with AFP).

Laboratory Network

In December 1999, the Global Polio Laboratory Network comprised 126 national (or subnational), 16 regional, and six specialized laboratories; 108 (73%) laboratories were fully accredited, 16 (11%) were provisionally accredited, 14 (9%) were reviewed but not

*Mass campaigns over a short period (days to weeks) in which two doses of oral poliovirus vaccine (OPV) are administered to all children, usually aged <5 years, regardless of vaccination history, with an interval of 4–6 weeks between doses.

† Focal mass campaigns in high-risk areas over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of vaccination history, with an interval of 4–6 weeks between doses.

§ Two stool specimens, collected 24 to 48 hours apart within 14 days of onset of paralysis, that arrive in the laboratory in good condition.

TABLE 1. Number of reported acute flaccid paralysis (AFP) cases, surveillance quality indicators, and number of confirmed poliomyelitis cases, by World Health Organization region — 1998 and 1999*

Region	No. reported AFP cases		Nonpolio AFP rate†		% persons with AFP with adequate specimens§		Confirmed polio (Wild virus-associated)			
	1998	1999	1998	1999	1998	1999	1998		1999	
African	1,699	4,949	0.30	0.80	36%	31%	993	(96)	2,825	(238)
American	1,662	2,059	0.95	1.16	73%	68%	0	(0)	0	(0)
Eastern Mediterranean	2,216	3,010	0.88	1.16	64%	69%	555	(230)	814	(462)
European	1,308	1,776	0.94	1.23	67%	74%	26	(26)	0	(0)
South-East Asian	11,352	11,876	1.25	1.57	60%	71%	4,775	(1,942)	3,330	(1,161)
Western Pacific	6,420	6,333	1.43	1.39	86%	86%	0	(0)	1	(1)
Total	**24,657**	**30,003**	**1.08**	**1.36**	**67%**	**67%**	**6,349**	**(2,294)**	**6,970**	**(1,862)**

* As of March 30, 2000.
† Number of AFP cases per 100,000 children aged <15 years.
§ Two stool specimens, collected 24 to 48 hours apart within 14 days of onset of paralysis, that arrive in the laboratory in good condition.

Poliomyelitis Eradication — Continued

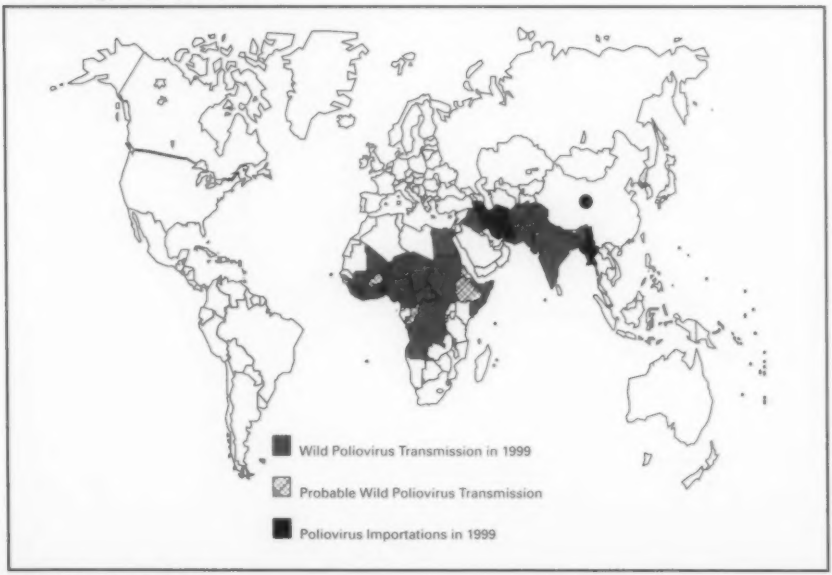
accredited, and 10 (7%) were pending review (*4*). Globally, the laboratory network processed an estimated 50,000 stool specimens for viral isolation during 1999; approximately 3000 polioviruses were isolated. Serotyping, intratypic differentiation, and genomic sequencing were performed on most wild isolates.

IMPACT OF STRATEGIES ON POLIO INCIDENCE

During 1998–1999, the number of known or suspected countries where polio is endemic decreased from 50 to 30 (Figure 1). Type 2 poliovirus is almost extinct, with the only known remaining foci existing in northern India (*5*). Genetic sequencing data from reservoir countries confirm that additional chains of type 1 and type 3 polio transmission have been broken and virus sublineages have become extinct.

From 1998 to 1999, reported polio cases increased 10% (from 6349 to 6970), reflecting the improved AFP reporting from Africa and the wild poliovirus type 3 outbreak in Angola (*3*). Poliovirus circulation in the African Region is confined largely to the Horn of Africa and western and central Africa (*6*). Polio cases reported from the South-East Asian Region decreased from 4775 (1998) to 3330 (1999). This decline was attributed to decreased transmission in central and southern India; however, endemicity remains high in northern India and Bangladesh. In 1999 in the Eastern Mediterranean Region, 814 polio cases were reported (555 cases in 1998). Following the certification of the American Region as polio-free in 1994, the Western Pacific Region in 2000 will be the second WHO region to be certified formally as polio-free (*7*).

FIGURE 1. Countries with known or probable wild poliovirus transmission — World Health Organization, 1999*



*As of March 13, 2000.

Poliomyelitis Eradication — Continued

PREPARING FOR THE POST-ERADICATION ERA

The criteria for certification of polio-free status (first by WHO region, then globally), defined by the Global Commission for the Certification of Poliomyelitis Eradication, requires that no indigenous wild poliovirus be found through optimal AFP surveillance for at least 3 years. Regional and national polio certification commissions are reviewing progress toward polio eradication in all WHO regions. A plan for increasing biocontainment of wild polioviruses to a small number of high biosafety laboratories has been prepared and initial implementation has begun in several WHO regions.

Reported by: Vaccines and Biologicals Div, World Health Organization, Geneva, Switzerland. Respiratory and Enteric Viruses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Vaccine Preventable Disease Eradication Div, National Immunization Program, CDC.

Editorial Note: Since 1988, substantial progress in polio eradication has been reported from all six WHO regions (*2*). In 1999, progress made in accelerating global polio eradication included 1) passage of a resolution by all WHO member states to support accelerated polio eradication; 2) implementation of four NIDs in India (approximately 140 million children reached in each round) and two additional SNIDs in eight northern Indian states; 3) vaccination of millions of children in countries affected by conflict; 4) a dramatic increase in AFP surveillance quality; and 5) expansion of the global polio eradication partnership to include the World Bank, the Bill and Melinda Gates Foundation, the United Nations Foundation, and the Aventis Pasteur company.

A multisector approach is needed in many countries to improve the quality of supplementary vaccination activities to ensure that every child is reached. Although more children are being vaccinated, many are unreached because of poor planning, inadequate social mobilization, and civil conflict. During 2000, efforts have been targeted at overcoming these obstacles, including augmentation of country-level technical and administrative capacity.

The continuing surveillance achievements in Afghanistan, Somalia, and Sudan demonstrate that high-quality surveillance can be implemented even in the most difficult circumstances. The success of the United Nations Secretary General and other partners in establishing "days of tranquility" for NIDs during 1999 in DR Congo demonstrated the feasibility of working successfully in conflict-affected areas. Sustaining political commitment is essential in stopping polio and is critical in implementing high-quality eradication activities in remaining countries where polio is endemic. Some countries, particularly in the African Region, have stopped NIDs despite surveillance sensitivity that remains well below certification standards.

Although substantial progress toward global polio eradication has been made during 1999, the interruption of virus transmission by the end of 2000 or as soon as possible will be feasible only if extraordinary efforts are taken in priority countries where polio is endemic, including 1) conducting extra NID rounds during the rest of 2000 and in 2001; 2) improving the quality of NIDs to reach all children, particularly children who have never received vaccine; 3) improving and maintaining AFP surveillance; 4) procuring sufficient vaccine to allow completion of polio eradication activities during 2000 and 2001; 5) expanding efforts to establish days of tranquility and truces to allow vaccination of children in countries affected by conflict; 6) meeting the projected financial shortage in

Poliomyelitis Eradication — Continued

external resources required through 2005[¶]; and 7) strengthening and maintaining political commitment.

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[¶]The polio eradication initiative is supported by the national governments. External support is provided by the global polio eradication partnership (WHO; United Nations Children's Fund [UNICEF]; Rotary International; CDC; U.S. Agency for International Development; and the governments of Japan, the United Kingdom, Denmark, Germany, and others). New partners include the World Bank, the Bill and Melinda Gates Foundation, the United Nations Foundation, and the Aventis Pasteur Company.

Notice to Readers

National Melanoma/Skin Cancer Detection and Prevention Month — May 2000

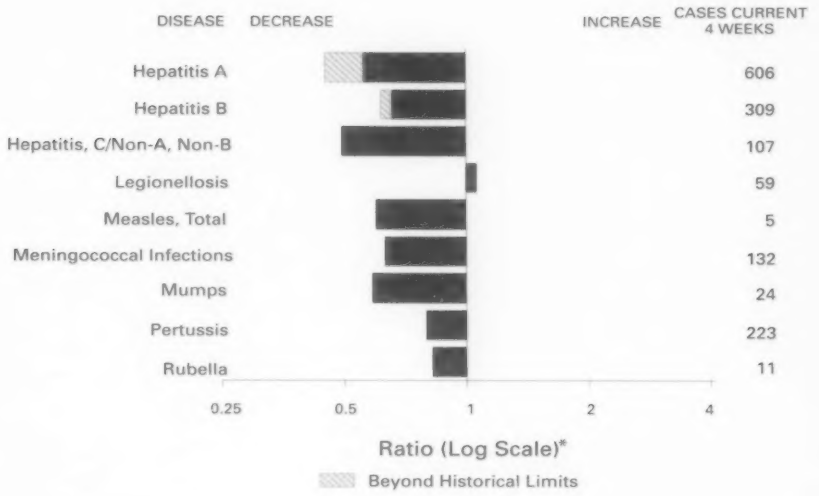
May is National Melanoma/Skin Cancer Detection and Prevention Month. This month is dedicated to increasing public awareness of the importance of skin cancer prevention, early detection, and treatment, including basal cell, squamous cell, and melanoma. The American Cancer Society estimates that in 2000, approximately 1.3 million new cases of highly curable basal cell and squamous cell carcinomas will be detected, approximately 47,700 new cases of malignant melanoma will be diagnosed, and approximately 9600 persons will die from skin cancer (*1*). Although death rates from basal cell and squamous cell carcinomas are low, these cancers can cause considerable damage and disfigurement if they are untreated. However, when detected early, approximately 95% of these carcinomas can be cured.

Data from the National Cancer Institute and CDC show new cases of melanoma increased 4.3% during 1973–1990 and 2.5% during 1990–1995; deaths from melanoma increased 1.7% during 1973–1990 and declined 0.4% during 1990–1995 (*2*). Among whites, the racial/ethnic population at highest risk, death rates for melanoma are twice as high among men as among women. National health objectives for 2010 include reducing the rate of melanoma deaths from 2.8 per 100,000 population in 1998 to 2.5 per 100,000 (*3*).

Exposure to the sun's ultraviolet (UV) rays appears to be the most important preventable factor in the development of skin cancer. Skin cancer is largely preventable when

(Continued on page 363)

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending April 22, 2000, with historical data — United States



*Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending April 22, 2000 (16th Week)

	Cum. 2000		Cum. 2000
Anthrax	-	HIV infection, pediatric*†	32
Brucellosis*	8	Plague	2
Cholera	-	Poliomyelitis, paralytic	-
Congenital rubella syndrome	1	Psittacosis*	4
Cyclosporiasis*	4	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	29
Encephalitis: California* serogroup viral	2	Streptococcal disease, invasive Group A	974
eastern equine*	-	Streptococcal toxic-shock syndrome*	35
St. Louis*	-	Syphilis, congenital§	10
western equine*	-	Tetanus	5
Ehrlichiosis human granulocytic (HGE)*	19	Toxic-shock syndrome	43
human monocytic (HME)*	1	Trichinosis	2
Hansen Disease*	11	Typhoid fever	92
Hantavirus pulmonary syndrome*†	2	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	25		

-: no reported cases
*Not notifiable in all states.
†Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases (NCID).
§Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update March 26, 2000.
¶Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 22, 2000, and April 24, 1999 (16th Week)

Reporting Area	AIDS		Chlamydia†		Cryptosporidiosis		*Escherichia coli* O157:H7*			
							NETSS		PHLIS	
	Cum. 2000†	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	10,143	12,852	162,696	200,688	316	461	421	347	252	297
NEW ENGLAND	666	661	6,405	6,473	16	24	34	52	36	47
Maine	11	5	368	209	3	2	3	4	3	-
N.H.	8	24	330	322	1	4	4	3	4	5
Vt.	1	5	178	152	8	2	1	6	2	1
Mass.	446	480	3,052	2,791	2	13	12	26	13	22
R.I.	21	30	677	682	2	-	-	1	-	2
Conn.	179	117	1,800	2,317	-	3	14	12	14	17
MID. ATLANTIC	2,471	3,278	7,514	24,092	31	101	51	21	45	13
Upstate N.Y.	131	400	N	N	22	30	50	16	38	1
N.Y. City	1,441	1,665	778	11,522	5	57	1	2	-	-
N.J.	563	668	1,211	3,870	-	7	-	3	2	12
Pa.	336	545	5,525	8,700	4	7	N	N	5	-
E.N. CENTRAL	921	867	27,661	31,689	55	73	77	64	19	48
Ohio	139	165	6,797	9,818	14	11	17	26	7	15
Ind.	88	124	3,775	3,623	5	7	16	12	6	8
Ill.	542	402	7,548	8,235	3	7	24	15	-	12
Mich.	114	126	7,604	6,594	10	10	12	11	3	7
Wis.	38	50	1,937	3,419	23	38	8	N	3	6
W.N. CENTRAL	203	266	7,585	11,677	25	26	81	72	57	69
Minn.	44	45	1,857	2,356	4	11	18	15	27	18
Iowa	15	30	991	1,216	5	4	16	8	4	2
Mo.	90	105	1,472	4,226	8	5	34	8	14	6
N. Dak.	-	4	61	299	1	-	2	3	4	2
S. Dak.	2	6	533	508	3	2	2	1	1	4
Nebr.	13	17	763	1,133	2	3	2	30	4	37
Kans.	39	59	1,908	1,939	2	1	7	7	3	-
S. ATLANTIC	2,848	3,490	33,330	40,794	57	78	35	33	17	24
Del.	45	40	899	878	1	-	-	1	-	-
Md.	271	459	3,358	4,178	5	5	5	2	1	-
D.C.	186	119	1,049	N	-	3	-	-	U	U
Va.	221	198	4,620	4,323	2	1	6	8	5	7
W. Va.	15	19	450	655	-	-	2	1	1	1
N.C.	128	267	6,098	7,278	6	1	8	7	2	7
S.C.	232	376	1,355	6,223	-	-	2	2	-	1
Ga.	300	350	6,085	8,075	32	52	3	1	3	U
Fla.	1,450	1,662	9,416	9,184	11	16	9	11	5	8
E.S. CENTRAL	415	607	14,847	14,086	12	4	24	26	14	13
Ky.	56	104	2,446	2,391	-	1	8	8	4	5
Tenn.	172	259	4,472	4,410	2	2	9	9	8	4
Ala.	120	111	5,175	3,612	7	1	1	4	-	3
Miss.	67	133	2,754	3,673	3	-	6	5	2	1
W.S. CENTRAL	824	1,536	27,011	26,712	10	30	17	10	24	21
Ark.	42	55	1,682	1,719	1	-	4	3	3	3
La.	143	154	5,114	4,156	-	15	-	3	11	3
Okla.	42	46	2,300	2,399	1	1	4	3	3	4
Tex.	597	1,281	17,915	18,438	8	14	9	1	7	11
MOUNTAIN	342	434	8,817	10,542	24	27	38	25	14	21
Mont.	5	4	328	427	1	2	8	-	-	-
Idaho	6	8	556	550	3	2	4	1	-	3
Wyo.	2	3	235	239	1	-	3	2	2	3
Colo.	70	102	997	2,242	6	4	12	9	6	4
N. Mex.	40	17	1,138	1,440	1	11	3	2	-	1
Ariz.	115	187	3,929	4,071	3	7	6	5	5	3
Utah	41	37	770	576	8	N	1	6	1	6
Nev.	63	76	864	997	1	1	1	-	-	1
PACIFIC	1,453	1,713	29,526	34,623	86	98	64	44	26	41
Wash.	148	88	4,014	3,643	N	N	8	10	13	17
Oreg.	35	45	1,466	1,884	2	8	9	13	9	10
Calif.	1,230	1,541	22,611	27,494	84	90	42	20	-	13
Alaska	5	6	766	623	-	-	1	-	-	-
Hawaii	35	33	669	979	-	-	4	1	4	1
Guam	13	1	-	142	-	-	N	N	U	U
P.R.	187	413	142	U	-	-	-	6	U	U
V.I.	16	11	-	U	-	U	-	U	U	U
Amer. Samoa	-	-	-	U	-	U	-	U	U	U
C.N.M.I.	-	-	-	U	-	U	-	U	U	U

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

* Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

† Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update March 26, 2000.

§ Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 22, 2000, and April 24, 1999 (16th Week)

Reporting Area	Gonorrhea		Hepatitis C/NA,NB		Legionellosis		Lyme Disease	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	84,955	106,531	689	1,109	205	270	958	1,449
NEW ENGLAND	1,730	2,151	20	4	12	19	108	372
Maine	25	17	-	-	2	2	-	1
N.H.	27	22	-	-	2	2	18	-
Vt.	16	18	2	2	-	3	1	-
Mass.	782	840	18	1	5	5	49	132
R.I.	167	183	-	1	-	1	-	10
Conn.	713	1,071	-	-	3	6	40	229
MID. ATLANTIC	5,303	12,901	13	39	38	77	666	769
Upstate N.Y.	1,769	1,759	13	19	17	20	326	242
N.Y. City	233	4,972	-	-	-	10	4	24
N.J.	643	2,270	-	-	-	5	-	132
Pa.	2,658	3,900	-	20	21	42	336	371
E.N. CENTRAL	17,404	18,896	73	636	56	79	7	58
Ohio	3,918	5,217	1	-	26	23	7	12
Ind.	1,690	2,044	-	-	12	6	-	2
Ill.	5,264	5,858	5	11	3	10	-	2
Mich.	5,333	4,390	67	205	10	25	-	1
Wis.	1,194	1,387	-	420	5	15	U	41
W.N. CENTRAL	2,572	4,877	160	48	15	10	40	21
Minn.	745	853	1	-	1	-	11	8
Iowa	199	287	-	-	3	4	1	2
Mo.	529	2,371	146	46	8	4	7	7
N. Dak.	4	29	-	-	-	-	-	1
S. Dak.	75	44	-	-	1	1	-	-
Nebr.	241	524	1	2	-	1	-	-
Kans.	779	769	12	-	2	-	21	3
S. ATLANTIC	24,363	31,078	35	74	44	29	111	156
Del.	488	530	-	-	4	2	10	7
Md.	2,332	4,063	5	21	12	4	77	123
D.C.	741	2,102	-	-	-	-	-	1
Va.	3,339	2,890	1	6	3	6	8	3
W. Va.	118	195	2	11	N	N	4	4
N.C.	5,387	6,284	8	18	5	5	4	16
S.C.	1,524	2,947	-	12	2	6	-	1
Ga.	3,911	5,571	-	1	2	-	-	-
Fla.	6,523	6,496	19	5	16	6	8	1
E.S. CENTRAL	10,353	11,062	122	74	6	14	-	20
Ky.	994	1,107	15	5	4	7	-	2
Tenn.	3,354	3,405	27	31	1	5	-	6
Ala.	3,807	3,282	4	1	1	2	-	6
Miss.	2,198	3,268	76	37	-	-	-	6
W.S. CENTRAL	14,223	15,148	134	115	2	1	-	-
Ark.	876	804	3	5	-	-	-	-
La.	3,784	3,675	44	89	-	1	-	-
Okla.	1,007	1,266	1	3	1	-	-	-
Tex.	8,556	9,403	86	18	1	-	-	-
MOUNTAIN	3,028	2,885	75	72	14	18	-	3
Mont.	4	16	1	4	-	-	-	-
Idaho	26	27	-	4	1	-	-	-
Wyo.	21	9	44	28	1	-	-	1
Colo.	995	669	12	9	6	1	-	-
N. Mex.	250	246	4	11	1	1	-	1
Ariz.	1,292	1,475	11	13	2	1	-	-
Utah	89	61	-	1	3	9	-	1
Nev.	351	382	3	2	-	6	-	-
PACIFIC	5,979	7,533	57	47	18	23	26	50
Wash.	722	656	7	3	5	5	-	-
Oreg.	168	276	12	6	N	N	2	2
Calif.	4,915	6,342	38	38	13	17	24	48
Alaska	91	117	-	-	-	1	-	-
Hawaii	83	142	-	-	-	-	N	N
Guam	-	20	-	-	-	-	-	-
P.R.	97	122	1	-	-	-	N	N
V.I.	-	U	-	U	-	U	-	U
Amer. Samoa	-	U	-	U	-	U	-	U
C.N.M.I.	-	U	-	U	-	U	-	U

N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 22, 2000, and April 24, 1999 (16th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
					NETSS		PHLIS	
	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999
UNITED STATES	245	336	1,375	1,625	6,479	7,459	4,072	6,792
NEW ENGLAND	6	6	182	256	432	434	415	452
Maine	1	-	48	41	37	29	15	19
N.H.	-	-	3	16	25	18	25	17
Vt.	1	1	13	46	35	15	35	18
Mass.	2	5	59	53	241	257	234	256
R.I.	-	-	5	32	16	21	26	35
Conn.	2	-	54	68	78	94	80	107
MID. ATLANTIC	32	107	266	311	686	1,133	717	804
Upstate N.Y.	15	22	198	199	234	229	199	251
N.Y. City	11	49	U	U	219	345	223	313
N.J.	-	26	41	69	24	272	124	228
Pa.	6	10	27	43	209	287	171	12
E.N. CENTRAL	27	36	9	12	991	1,184	508	1,009
Ohio	3	4	2	3	256	243	173	195
Ind.	2	6	-	-	114	81	91	84
Ill.	13	15	-	-	315	388	1	372
Mich.	9	8	7	9	172	264	173	240
Wis.	-	3	-	-	134	208	70	118
W.N. CENTRAL	12	13	131	200	336	426	364	533
Minn.	4	2	24	27	43	124	115	185
Iowa	-	3	18	37	46	51	25	47
Mo.	1	7	3	7	130	121	127	165
N. Dak.	-	-	26	30	4	8	18	18
S. Dak.	-	-	32	60	20	17	23	25
Nebr.	1	-	-	1	29	40	22	38
Kans.	6	1	28	38	64	65	34	55
S. ATLANTIC	67	74	593	586	1,273	1,380	738	1,193
Del.	1	-	10	17	15	26	22	32
Md.	24	24	129	132	187	176	162	184
D.C.	2	6	-	-	1	26	U	U
Va.	16	15	141	135	147	167	114	136
W. Va.	-	1	35	33	33	22	26	24
N.C.	7	6	123	131	201	260	122	245
S.C.	-	-	45	44	104	86	74	87
Ga.	1	6	67	46	226	260	212	342
Fla.	16	16	43	48	359	357	6	143
E.S. CENTRAL	10	8	56	83	346	403	185	263
Ky.	2	2	9	19	70	86	36	63
Tenn.	1	3	32	26	89	110	67	101
Ala.	6	3	15	38	123	123	74	84
Miss.	1	-	-	-	64	85	8	15
W.S. CENTRAL	2	11	23	34	411	551	431	536
Ark.	1	2	-	-	66	71	22	61
La.	1	7	-	-	27	97	95	99
Okla.	-	1	23	34	64	74	46	53
Tex.	-	1	-	-	254	309	268	323
MOUNTAIN	16	15	50	50	672	621	427	603
Mont.	1	2	13	18	23	8	-	1
Idaho	-	1	-	-	37	21	-	27
Wyo.	-	-	21	18	8	6	3	9
Colo.	8	5	-	1	201	195	149	200
N. Mex.	-	2	3	-	53	74	44	79
Ariz.	2	4	13	13	191	176	144	150
Utah	3	1	-	-	108	93	87	95
Nev.	2	-	-	-	51	48	-	42
PACIFIC	73	66	65	93	1,332	1,327	287	1,399
Wash.	5	5	-	-	83	109	127	197
Oreg.	17	7	-	1	92	104	107	135
Calif.	50	49	55	87	1,080	1,011	-	978
Alaska	-	-	10	5	20	10	8	5
Hawaii	1	5	-	-	57	93	45	84
Guam	-	-	-	-	-	18	U	U
P.R.	-	-	12	30	7	115	U	U
V.I.	-	U	-	U	-	U	U	U
Amer. Samoa	-	U	-	U	-	U	U	U
C.N.M.I.	-	U	-	U	-	U	U	U

N: Not notifiable U: Unavailable -: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 22, 2000, and April 24, 1999 (16th Week)

Reporting Area	Shigellosis* NETSS Cum. 2000	Shigellosis* NETSS Cum. 1999	Shigellosis* PHLIS Cum. 2000	Shigellosis* PHLIS Cum. 1999	Syphilis (Primary & Secondary) Cum. 2000	Syphilis (Primary & Secondary) Cum. 1999	Tuberculosis Cum. 2000	Tuberculosis Cum. 1999†
UNITED STATES	3,906	3,623	1,666	2,097	1,776	2,049	2,658	4,038
NEW ENGLAND	81	87	69	82	24	23	85	103
Maine	2	1	-	-	-	-	2	6
N.H.	1	6	1	5	-	-	2	-
Vt.	1	4	-	3	-	1	-	-
Mass.	56	55	49	53	20	13	58	50
R.I.	8	12	7	8	1	1	7	15
Conn.	13	9	12	13	3	8	16	32
MID. ATLANTIC	387	301	316	166	47	89	555	670
Upstate N.Y.	235	64	94	22	4	7	53	73
N.Y. City	121	101	155	84	8	36	322	317
N.J.	-	86	35	60	11	20	148	145
Pa.	31	50	32	-	24	26	32	135
E.N. CENTRAL	653	628	234	320	385	321	328	329
Ohio	49	189	33	31	22	27	51	68
Ind.	108	22	11	9	148	93	19	19
Ill.	208	237	2	210	107	140	203	148
Mich.	231	92	179	56	88	49	30	69
Wis.	57	88	9	14	20	12	25	25
W.N. CENTRAL	281	208	171	163	19	50	142	137
Minn.	47	29	60	32	2	5	49	62
Iowa	48	2	21	3	8	3	11	7
Mo.	147	142	76	108	5	35	60	50
N. Dak.	1	2	1	2	-	-	-	1
S. Dak.	1	5	-	3	-	-	8	3
Nebr.	18	14	8	8	2	4	3	4
Kans.	19	14	5	7	2	3	11	10
S. ATLANTIC	576	596	107	137	559	736	538	801
Del.	3	7	3	2	2	1	-	11
Md.	33	38	10	8	97	150	66	68
D.C.	-	22	U	U	17	43	2	14
Va.	24	21	15	5	40	52	46	83
W. Va.	2	3	2	1	1	2	13	12
N.C.	36	71	16	35	170	172	83	121
S.C.	5	32	4	12	19	81	22	103
Ga.	68	66	25	24	101	125	128	152
Fla.	405	336	32	50	112	110	178	237
E.S. CENTRAL	193	365	91	197	286	368	179	233
Ky.	36	36	21	24	30	39	31	30
Tenn.	104	259	63	154	182	181	67	76
Ala.	9	43	5	18	41	96	81	93
Miss.	44	27	2	1	33	52	-	34
W.S. CENTRAL	389	581	334	260	259	301	70	617
Ark.	66	38	3	21	30	26	43	40
La.	19	51	50	38	63	63	-	U
Okla.	9	148	6	45	58	67	27	29
Tex.	295	344	275	156	108	145	-	548
MOUNTAIN	289	207	98	118	60	61	112	129
Mont.	2	3	-	-	-	-	4	-
Idaho	24	3	-	3	-	-	2	-
Wyo.	1	2	1	1	1	-	-	-
Colo.	40	39	21	27	1	-	14	U
N. Mex.	31	30	15	18	7	2	19	21
Ariz.	118	106	43	50	49	58	44	64
Utah	20	15	18	15	-	1	10	12
Nev.	53	9	-	4	2	-	19	32
PACIFIC	1,057	650	246	654	137	100	649	1,019
Wash.	193	29	188	38	18	16	57	48
Oreg.	80	18	49	19	2	1	-	28
Calif.	764	587	-	582	117	81	541	878
Alaska	7	-	1	-	-	1	20	18
Hawaii	13	16	8	15	-	1	31	47
Guam	-	3	U	U	-	-	-	-
P.R.	1	21	U	U	29	63	-	61
V.I.	-	U	U	U	-	U	-	U
Amer. Samoa	-	U	U	U	-	U	-	U
C.N.M.I.	-	U	U	U	-	U	-	U

N: Not notifiable U: Unavailable -: no reported cases

*Individual cases may be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

†Cumulative reports of provisional tuberculosis cases for 1999 are unavailable ("U") for some areas using the Tuberculosis Information System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 22, 2000, and April 24, 1999 (16th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported*		Total	
	Cum. 2000†	Cum. 1999	Cum. 2000	Cum. 1999	Cum. 2000	Cum. 1999	2000	Cum. 2000	2000	Cum. 2000	Cum. 2000	Cum. 1999
UNITED STATES	379	390	3,452	5,750	1,449	1,884	3	9	-	3	12	36
NEW ENGLAND	21	27	82	67	14	52	-	-	-	-	-	4
Maine	1	2	5	2	2	-	-	-	-	-	-	-
N.H.	6	5	8	7	6	4	-	-	-	-	-	1
Vt.	2	4	3	1	3	1	-	-	-	-	-	-
Mass.	7	10	35	23	3	23	-	-	-	-	-	3
R.I.	1	-	1	6	-	8	-	-	-	-	-	-
Conn.	4	6	30	28	-	16	U	-	U	-	-	-
MID. ATLANTIC	53	62	148	378	158	279	-	-	-	-	-	2
Upstate N.Y.	26	24	75	76	31	56	-	-	-	-	-	2
N.Y. City	11	20	73	106	127	93	U	-	U	-	-	-
N.J.	12	17	-	48	-	35	-	-	-	-	-	-
Pa.	4	1	-	148	-	95	-	-	-	-	-	-
E.N. CENTRAL	52	56	448	1,169	160	175	-	3	-	-	3	-
Ohio	22	22	112	253	33	31	-	2	-	-	2	-
Ind.	7	6	16	44	12	10	-	-	-	-	-	-
Ill.	19	23	154	223	2	-	-	-	-	-	-	-
Mich.	4	5	153	614	112	122	-	1	-	-	1	-
Wis.	-	-	13	35	1	12	-	-	-	-	-	-
W.N. CENTRAL	15	25	400	249	101	87	-	1	-	-	1	-
Minn.	7	11	36	18	6	12	-	-	-	-	-	-
Iowa	-	1	36	52	16	15	U	-	U	-	-	-
Mo.	4	6	233	140	59	50	-	-	-	-	-	-
N. Dak.	1	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	1	-	8	-	-	-	-	-	-	-	-
Nebr.	1	3	7	25	8	9	U	-	U	-	-	-
Kans.	2	3	88	6	12	1	-	1	-	-	1	-
S. ATLANTIC	109	84	421	512	319	310	-	-	-	-	-	3
Del.	-	-	-	1	-	-	-	-	-	-	-	-
Md.	25	24	52	113	38	67	-	-	-	-	-	-
D.C.	-	2	2	22	6	7	-	-	-	-	-	-
Va.	20	9	49	41	42	29	-	-	-	-	-	3
W. Va.	3	1	33	5	2	8	-	-	-	-	-	-
N.C.	8	16	65	43	81	69	-	-	-	-	-	-
S.C.	5	2	13	7	2	34	-	-	-	-	-	-
Ga.	31	21	53	153	45	38	-	-	-	-	-	-
Fla.	17	9	154	127	103	58	-	-	-	-	-	-
E.S. CENTRAL	20	29	106	145	88	145	-	-	-	-	-	2
Ky.	9	5	18	29	21	12	-	-	-	-	-	2
Tenn.	8	12	21	61	28	64	-	-	-	-	-	-
Ala.	3	10	22	28	8	38	-	-	-	-	-	-
Miss.	-	2	45	27	31	31	U	-	U	-	-	-
W.S. CENTRAL	20	29	553	1,307	72	243	-	-	-	-	-	2
Ark.	-	1	55	14	27	21	-	-	-	-	-	-
La.	3	8	11	53	18	61	-	-	-	-	-	-
Okla.	17	18	111	191	27	43	-	-	-	-	-	-
Tex.	-	2	376	1,049	-	118	-	-	-	-	-	2
MOUNTAIN	49	43	283	508	130	160	3	5	-	-	5	-
Mont.	-	1	1	5	3	7	-	-	-	-	-	-
Idaho	2	1	11	17	4	9	U	-	U	-	-	-
Wyo.	-	1	6	2	-	2	-	-	-	-	-	-
Colo.	11	5	55	90	27	29	1	1	-	-	1	-
N. Mex.	10	10	30	17	33	45	-	-	-	-	-	-
Ariz.	22	21	146	312	48	38	-	-	-	-	-	-
Utah	4	3	18	21	4	8	2	2	-	-	2	-
Nev.	-	1	16	44	11	22	-	2	-	-	2	-
PACIFIC	40	35	1,011	1,415	407	433	-	-	-	3	3	23
Wash.	3	-	65	90	15	17	-	-	-	-	-	5
Oreg.	13	14	71	88	33	36	-	-	-	-	-	8
Calif.	11	17	871	1,230	351	368	-	-	-	3	3	10
Alaska	1	3	4	4	3	7	-	-	-	-	-	-
Hawaii	12	1	-	3	5	5	-	-	-	-	-	-
Guam	-	-	-	2	-	2	U	-	U	-	-	-
P.R.	-	1	26	75	17	76	-	-	-	-	-	-
V.I.	-	U	-	U	-	U	U	-	U	-	-	U
Amer. Samoa	-	U	-	U	-	U	U	-	U	-	-	U
C.N.M.I.	-	U	-	U	-	U	U	-	U	-	-	U

N: Not notifiable U: Unavailable -: no reported cases

*For imported measles, cases include only those resulting from importation from other countries.

†Of 85 cases among children aged <5 years, serotype was reported for 37 and of those, 7 were type b.

TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 22, 2000, and April 24, 1999 (16th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999	2000	Cum. 2000	Cum. 1999
UNITED STATES	770	884	6	117	127	70	1,228	1,894	3	19	27
NEW ENGLAND	45	51	-	2	3	3	330	164	-	5	6
Maine	3	3	-	-	-	-	9	-	-	-	-
N.H.	3	9	-	-	1	-	49	21	-	1	-
Vt.	2	3	-	-	-	2	67	9	-	-	-
Mass.	28	29	-	-	2	1	186	126	-	3	6
R.I.	2	2	-	1	-	-	7	3	-	-	-
Conn.	7	5	U	1	-	U	12	5	U	1	-
MID. ATLANTIC	70	86	-	7	15	3	111	405	-	2	2
Upstate N.Y.	14	21	-	5	2	3	69	351	-	2	2
N.Y. City	16	28	U	-	3	U	-	10	U	-	-
N.J.	18	14	-	-	-	-	-	9	-	-	-
Pa.	22	23	-	2	10	-	42	35	-	-	-
E.N. CENTRAL	129	159	-	14	16	3	175	166	-	-	-
Ohio	26	56	-	6	6	-	131	92	-	-	-
Ind.	19	15	-	-	-	3	12	8	-	-	-
Ill.	35	53	-	3	4	-	13	27	-	-	-
Mich.	37	18	-	5	6	-	9	18	-	-	-
Wis.	12	17	-	-	-	-	10	21	-	-	-
W.N. CENTRAL	61	109	-	9	3	6	46	38	-	2	6
Minn.	3	25	-	-	-	6	21	-	-	-	-
Iowa	12	20	U	3	2	U	9	13	U	-	-
Mo.	38	41	-	1	1	-	7	10	-	-	-
N. Dak.	1	-	-	-	-	-	1	-	-	-	-
S. Dak.	4	5	-	-	-	-	1	2	-	-	-
Nebr.	1	7	U	2	-	U	2	1	U	-	6
Kans.	2	11	-	3	-	-	5	12	-	2	-
S. ATLANTIC	122	124	2	16	23	7	95	85	-	6	2
Del.	-	2	-	-	-	-	1	-	-	-	-
Md.	11	23	-	4	4	2	28	32	-	-	1
D.C.	-	1	-	-	1	-	-	-	-	-	-
Va.	19	19	1	4	7	-	10	12	-	-	-
W. Va.	3	2	-	-	-	-	-	1	-	-	-
N.C.	25	17	-	2	5	-	28	22	-	-	1
S.C.	8	18	1	6	2	1	15	6	-	6	-
Ga.	22	23	-	-	-	4	13	6	-	-	-
Fla.	34	19	-	-	4	-	-	6	-	-	-
E.S. CENTRAL	56	71	2	3	3	-	26	43	3	4	-
Ky.	12	12	-	-	-	-	15	12	-	1	-
Tenn.	25	26	2	2	-	-	2	21	-	-	-
Ala.	16	21	-	1	1	-	8	8	3	3	-
Miss.	3	12	U	-	2	U	1	2	U	-	-
W.S. CENTRAL	51	66	-	1	15	1	6	48	-	-	5
Ark.	5	15	-	1	-	1	6	4	-	-	-
La.	13	33	-	-	2	-	-	2	-	-	-
Okla.	17	15	-	-	1	-	-	3	-	-	-
Tex.	16	3	-	-	12	-	-	39	-	-	5
MOUNTAIN	49	67	1	8	8	26	261	230	-	-	4
Mont.	1	-	-	1	-	-	1	1	-	-	-
Idaho	6	8	U	-	-	U	35	87	U	-	-
Wyo.	-	2	-	-	-	-	-	2	-	-	-
Colo.	11	20	-	1	3	16	144	57	-	-	-
N. Mex.	7	8	-	1	N	1	48	13	-	-	-
Ariz.	16	20	-	-	-	9	26	42	-	-	3
Utah	6	4	1	3	4	-	4	26	-	-	1
Nev.	2	5	-	2	1	-	3	2	-	-	-
PACIFIC	187	151	1	57	41	21	178	715	-	-	2
Wash.	14	20	-	2	-	18	64	372	-	-	-
Oreg.	24	30	N	N	N	-	24	8	-	-	-
Calif.	144	93	-	51	35	3	81	317	-	-	2
Alaska	2	4	1	3	1	-	5	2	-	-	-
Hawaii	3	4	-	1	5	-	4	16	-	-	-
Guam	-	-	U	-	1	U	-	1	U	-	-
P.R.	1	7	-	-	-	-	-	-	-	-	-
V.I.	-	U	U	-	U	U	-	U	U	-	U
Amer. Samoa	-	U	U	-	U	U	-	U	U	-	U
C.N.M.I.	-	U	U	-	U	U	-	U	U	-	U

N: Not notifiable U: Unavailable - : no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending April 22, 2000 (16th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	473	342	93	23	7	8	63
Boston, Mass.	159	104	36	12	4	3	20
Bridgeport, Conn.	37	33	4	-	-	-	1
Cambridge, Mass.	10	8	2	-	-	-	-
Fall River, Mass.	19	16	3	-	-	-	2
Hartford, Conn.	41	26	9	4	2	-	10
Lowell, Mass.	18	13	4	1	-	-	3
Lynn, Mass.	11	8	3	-	-	-	1
New Bedford, Mass.	30	25	4	1	-	-	-
New Haven, Conn.	42	32	5	1	1	3	9
Providence, R.I.	U	U	U	U	U	U	U
Somerville, Mass.	4	3	1	-	-	-	-
Springfield, Mass.	26	16	7	2	-	1	3
Waterbury, Conn.	13	11	2	-	-	-	3
Worcester, Mass.	63	47	13	2	-	1	11
MID. ATLANTIC	2,141	1,498	420	141	41	37	110
Albany, N.Y.	46	35	9	1	-	1	7
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	93	69	13	4	2	2	9
Camden, N.J.	21	11	5	1	2	2	-
Elizabeth, N.J.	10	10	-	-	-	-	-
Erie, Pa.§	36	24	12	-	-	-	4
Jersey City, N.J.	U	U	U	U	U	U	U
New York City, N.Y.	1,120	762	241	78	20	18	24
Newark, N.J.	75	46	15	13	-	1	2
Paterson, N.J.	14	9	2	1	1	1	-
Philadelphia, Pa.	365	254	69	29	11	2	25
Pittsburgh, Pa.§	64	44	12	4	-	4	3
Reading, Pa.	22	18	2	-	2	-	-
Rochester, N.Y.	123	94	20	6	1	2	18
Schenectady, N.Y.	22	18	3	-	1	-	4
Scranton, Pa.§	27	23	4	-	-	-	2
Syracuse, N.Y.	58	46	7	1	1	3	5
Trenton, N.J.	21	15	3	2	-	1	5
Utica, N.Y.	24	20	3	1	-	-	2
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,024	1,375	405	146	39	58	169
Akron, Ohio	60	43	12	5	-	-	3
Canton, Ohio	41	28	7	3	2	1	3
Chicago, Ill.	424	260	102	39	10	12	47
Cincinnati, Ohio	96	61	18	8	2	7	10
Cleveland, Ohio	U	U	U	U	U	U	U
Columbus, Ohio	204	150	34	9	3	8	18
Dayton, Ohio	139	109	20	9	-	1	6
Detroit, Mich.	187	98	46	25	7	11	19
Evansville, Ind.	56	41	13	1	1	-	2
Fort Wayne, Ind.	75	57	12	2	3	1	6
Gary, Ind.	23	15	5	3	-	-	1
Grand Rapids, Mich.	76	59	8	5	-	4	11
Indianapolis, Ind.	183	109	50	14	3	7	12
Lansing, Mich.	50	33	12	3	-	2	4
Milwaukee, Wis.	114	80	23	7	3	1	5
Peoria, Ill.	38	32	3	3	-	-	2
Rockford, Ill.	48	38	6	3	-	1	4
South Bend, Ind.	46	36	7	2	1	-	2
Toledo, Ohio	106	77	20	5	3	1	11
Youngstown, Ohio	58	49	7	-	1	1	3
W.N. CENTRAL	765	564	136	32	14	19	64
Des Moines, Iowa	149	118	23	2	2	4	19
Duluth, Minn.	23	19	3	1	-	-	-
Kansas City, Kans.	39	29	6	2	1	1	4
Kansas City, Mo.	94	72	16	5	1	-	6
Lincoln, Nebr.	37	29	6	-	1	1	4
Minneapolis, Minn.	155	119	26	5	-	5	19
Omaha, Nebr.	74	51	13	6	1	3	7
St. Louis, Mo.	108	69	23	9	5	2	2
St. Paul, Minn.	U	U	U	U	U	U	U
Wichita, Kans.	86	58	20	2	3	3	3

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,126	737	222	114	28	22	70
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	156	90	34	25	4	2	15
Charlotte, N.C.	73	45	16	10	1	1	1
Jacksonville, Fla.	136	105	23	3	3	2	7
Miami, Fla.	102	69	23	9	-	1	8
Norfolk, Va.	51	34	10	4	1	2	2
Richmond, Va.	86	45	21	13	4	3	6
Savannah, Ga.	34	20	10	2	2	-	2
St. Petersburg, Fla.	61	50	3	4	2	2	6
Tampa, Fla.	195	139	35	12	4	4	17
Washington, D.C.	206	124	47	22	7	5	6
Wilmington, Del.	26	16	-	10	-	-	-
E.S. CENTRAL	836	564	164	69	22	17	73
Birmingham, Ala.	183	120	37	17	6	3	20
Chattanooga, Tenn.	44	31	9	2	2	-	4
Knoxville, Tenn.	84	68	11	2	3	-	7
Lexington, Ky.	54	39	8	7	-	-	5
Memphis, Tenn.	199	122	40	24	8	5	12
Mobile, Ala.	92	60	22	7	1	2	4
Montgomery, Ala.	48	28	14	5	1	-	8
Nashville, Tenn.	132	96	23	5	1	7	13
W.S. CENTRAL	1,471	975	318	99	36	42	106
Austin, Tex.	76	51	15	8	-	2	2
Baton Rouge, La.	48	27	19	1	-	1	4
Corpus Christi, Tex.	54	39	7	2	1	5	3
Dallas, Tex.	178	104	45	18	7	4	17
El Paso, Tex.	63	45	10	5	2	1	4
Ft. Worth, Tex.	114	71	25	8	2	8	6
Houston, Tex.	379	249	84	25	8	13	22
Little Rock, Ark.	61	45	10	3	3	-	2
New Orleans, La.	57	29	16	6	4	2	4
San Antonio, Tex.	252	169	53	19	5	5	20
Shreveport, La.	75	60	13	1	1	-	8
Tulsa, Okla.	114	86	21	3	3	1	14
MOUNTAIN	883	607	173	70	16	17	88
Albuquerque, N.M.	108	71	16	14	4	3	11
Boise, Idaho	59	45	11	2	-	1	6
Colo. Springs, Colo.	74	56	12	4	1	1	6
Denver, Colo.	107	65	23	11	5	3	14
Las Vegas, Nev.	237	145	64	18	3	7	13
Ogden, Utah	37	29	5	3	-	-	6
Phoenix, Ariz.	U	U	U	U	U	U	U
Pueblo, Colo.	23	18	4	1	-	-	2
Salt Lake City, Utah	94	68	16	7	1	2	24
Tucson, Ariz.	144	110	22	10	2	-	6
PACIFIC	1,629	1,212	272	83	38	24	187
Berkeley, Calif.	18	10	2	3	-	3	4
Fresno, Calif.	119	79	22	7	6	5	16
Glendale, Calif.	17	14	1	1	1	-	1
Honolulu, Hawaii	69	53	10	3	2	1	5
Long Beach, Calif.	57	38	12	5	2	-	6
Los Angeles, Calif.	348	249	68	19	8	4	26
Pasadena, Calif.	23	18	3	1	-	1	3
Portland, Oreg.	121	99	12	7	2	1	9
Sacramento, Calif.	207	152	33	10	9	3	38
San Diego, Calif.	160	118	30	5	4	3	26
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	197	160	30	3	2	2	25
Santa Cruz, Calif.	33	28	5	-	-	-	5
Seattle, Wash.	91	65	17	8	1	-	6
Spokane, Wash.	65	52	11	2	-	-	7
Tacoma, Wash.	104	77	16	9	1	1	10
TOTAL	11,348¶	7,874	2,203	777	241	244	930

U: Unavailable -:no reported cases

*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

§Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

Notice to Readers — Continued

sun protection measures against UV rays are used consistently. However, approximately 50% of adults in the United States do not practice any such measures (*3*). Young people have moderate to high awareness of skin cancer but are unaware of the connection between severe sunburns and skin cancer; sunburns, although considered painful and embarrassing, are not perceived as a health threat (*4*).

CDC's skin cancer prevention and education efforts, including the Choose Your Cover campaign aimed primarily at young people, encourage all people to protect themselves from the sun's UV rays year-round. The overall goals include influencing social norms related to sun protection and tanned skin as well as improving awareness, knowledge, and behaviors related to skin cancer. CDC's efforts focus on 1) informing the public that even a few serious sunburns can increase a person's risk for skin cancer and 2) promoting the Choose Your Cover sun protection options: seeking shade, covering up, wearing a hat and sunglasses, and using sunscreen that has a sun protection factor of 15 or higher and has both UVA and UVB protection. Information on CDC's Choose Your Cover skin cancer prevention campaign is available at http://www.cdc.gov/chooseyourcover.

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